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Application No. 10/762,240
Amendment dated
Reply to Office Action of November 7, 2006

Docket No.: 215407-106338

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-25. (Cancelled)

26. (Currently Amended) A filter element comprising:

a filter media including a first material, wherein the filter media includes a clean side face; [[[and]]]

a seal including a second material bonded to the clean side face, wherein the seal is bonded to a perimeter of the clean side face to form a flange portion integral with the filter media; and

a flexible portion extending from the flange portion that is adapted to be compressed by a lid of a filter housing, wherein the flexible portion includes a pair of flexible flange portions that extend obliquely in divergent directions from the flange portion.

27. (Previously presented) The filter element according to claim 26 further comprising a rim portion, wherein the rim portion is bonded to a perimeter of the filter media, wherein the perimeter of the filter media includes at least one side surface of the filter media.

28. (Previously presented) The filter element according to claim 27, wherein the seal includes a second flange portion integrally-extending from the flange portion in a perpendicular direction with respect to the least one side surface of the filter media, wherein the second flange portion is adapted to overlay and seal a ledge of the filter housing.

29. (Previously presented) The filter element according to claim 26, wherein the rim portion is adapted to radially engage and seal an inner surface of the filter housing.

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30-33. (Cancelled)

34. (Currently Amended) The filter element according to claim 26, wherein the filter media first material is a pleated filter media including cellulose, cellulose blends, polyester fibers, or polypropylene fibers.

35. (Currently Amended) The filter element according to claim 26, wherein the seal second material includes thermoplastic elastomer (TPE) embedded in ethylene-polylene terpolymer rubber (EPDM).

36. (Currently Amended) A filter element comprising:

a filter media including a first material, wherein the filter media includes a clean side face;

a rigid frame including a second material bonded to the clean side face, wherein the rigid frame is bonded to a perimeter of the clean side face to form a flange portion integral with the filter media; and

a seal including a third material bonded to the rigid frame, wherein the seal is bonded to a perimeter of the rigid frame to form a seal flange portion integral with the rigid frame.

37. (Currently Amended) A method for manufacturing a filter element comprising the steps of:

inserting a filter media including a first material into an injection molding machine, wherein the filter media includes a clean side face;

injecting a second material defining a rigid frame directly onto a perimeter of the clean side face to form a rigid frame; and

injecting a third material defining a seal including a flange portion directly onto the rigid frame to form a flange portion of a seal.

38. (Currently Amended) The method according to claim 37 further comprising the step of forming, with the second material defining the seal, a flexible portion extending from the flange portion.

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39. (Previously presented) The method according to claim 38, wherein the flexible portion includes a pair of flexible flange portions that extend obliquely in divergent directions from the flange portion.

40. (Currently Amended) The method according to claim 38 further comprising the step of forming a rim portion from the ~~third-material defining the seal~~, wherein the rim portion is bonded to a perimeter of the rigid frame.

41. (Currently Amended) The method according to claim 38 further comprising the step of forming a second flange portion from the ~~third-material defining the rigid frame that integrally-extends extending~~ from the rigid frame in a perpendicular direction with respect to at least one side surface of the filter media, wherein the second flange portion is adapted to overlay and seal a ledge of the filter housing.

42. (Previously presented) The method according to claim 38, wherein the flexible portion includes a U-shape portion having a first leg and a second leg.

43. (Previously presented) The method according to claim 38, wherein the flexible portion includes a bulb seal including a void.

44. (Previously presented) The method according to claim 37, wherein the thermoplastic material is a thermoplastic elastic material (TPE) embedded in ethylene-propylene terpolymer (EPDM).

45. (Previously presented) The method according to claim 37, wherein the filter media is a pleated filter media comprised of cellulose, cellulose blends, polyester fibers, or polypropylene fibers.

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46. (New) A filter element comprising:

a filter media including a clean side face;
a seal bonded to a perimeter of the clean side face to form a flange portion integral with the filter media; and
a flexible portion extending from the flange portion that is adapted to be compressed by a lid of a filter housing, wherein the flexible portion includes a U-shape portion having a first leg and a second leg, and wherein the U-shape portion extends toward the lid.

47. (New) The filter element according to claim 46 further comprising a rim portion, wherein the rim portion is bonded to a perimeter of the filter media, wherein the perimeter of the filter media includes at least one side surface of the filter media.

48. (New) The filter element according to claim 47, wherein the seal includes a second flange portion integrally-extending from the flange portion in a perpendicular direction with respect to the least one side surface of the filter media, wherein the second flange portion is adapted to overlay and seal a ledge of the filter housing.

49. (New) The filter element according to claim 46, wherein the rim portion is adapted to radially engage and seal an inner surface of the filter housing.

50. (New) The filter element according to claim 46, wherein the filter media is a pleated filter media including cellulose, cellulose blends, polyester fibers, or polypropylene fibers.

51. (New) The filter element according to claim 46, wherein the seal includes thermoplastic elastomer (TPE) embedded in ethylene-polylene terpolymer rubber (EPDM).

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52. (New) A filter element comprising:

- a filter media including a clean side face;
- a seal bonded to a perimeter of the clean side face to form a flange portion integral with the filter media;
- a flexible portion extending from the flange portion axially compressible by a lid of a filter housing, wherein the flexible portion includes a bulb seal defining a void.

53. (New) The filter element according to claim 52 further comprising a rim portion, wherein the rim portion is bonded to a perimeter of the filter media, wherein the perimeter of the filter media includes at least one side surface of the filter media.

54. (New) The filter element according to claim 53, wherein the seal includes a second flange portion integrally-extending from the flange portion in a perpendicular direction with respect to the least one side surface of the filter media, wherein the second flange portion is adapted to overlay and seal a ledge of the filter housing.

55. (New) The filter element according to claim 52, wherein the rim portion is adapted to radially engage and seal an inner surface of the filter housing.

56. (New) The filter element according to claim 52, wherein the filter media is a pleated filter media including cellulose, cellulose blends, polyester fibers, or polypropylene fibers.

57. (New) The filter element according to claim 52, wherein the seal includes thermoplastic elastomer (TPE) embedded in ethylene-polylene terpolymer rubber (EPDM).

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58. (New) A filter element comprising:

a pleated filter media including a generally planar first face defining a first planar axis and a generally planar second face, the filter media defining a media perimeter between the generally planar first face and the generally planar second face, wherein the perimeter includes an end and a side that meet at a corner;

a thermoplastic vulcanizate seal attached to the corner of the pleated filter media and extending over at least a portion of the end and at least a portion of the side, wherein the seal extends over at least a portion of the first planar face; and

a first flange extending from the seal, wherein at least a portion of the first flange extends away from the filter media.

59. (New) The filter element according to claim 58, further comprising a second flange extending from the seal, wherein at least a portion of the second flange extends away from the filter media, and further wherein the first flange and the second flange define a gap therebetween.

60. (New) The filter element according to claim 59, wherein the first flange and the second flange are generally perpendicular.

61. (New) The filter element according to claim 59, wherein an axis of the first flange and an axis of the second flange diverge.

62. (New) The filter element according to claim 59, wherein the first and the second flange extend from a common base that extends away from the perimeter.

63. (New) The filter element according to claim 58, wherein the first flange is connected to the seal via a base, and wherein the first flange extends from the base.